



# *X-Plain™*

## *Ovarian Cancer*

### **Reference Summary**

Ovarian cancer is fairly rare.

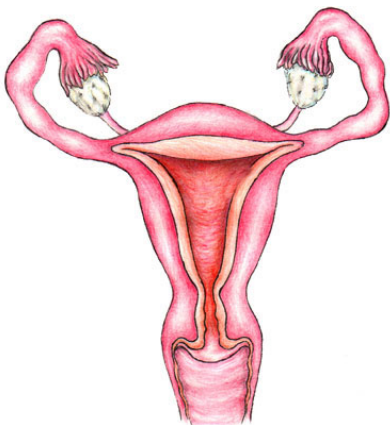
Ovarian cancer usually occurs in women who are over 50 years old and it may sometimes be hereditary.

This reference summary will help you understand how ovarian cancer is detected and treated.

#### **Anatomy**

The female reproductive organs include:

- The vagina
- The uterus
- The fallopian tubes
- The ovaries.



The female reproductive organs are located in the pelvis between the urinary bladder and the rectum. The ovaries have two main functions. One function is ovulation, or the release of eggs that are needed for reproduction.

The other main function of the ovaries is to produce specialized hormones, such as estrogen and progesterone. These hormones help to regulate ovulation.

They also prepare the inner lining of the uterus to proceed with a pregnancy. When an egg is released, it goes down the fallopian tube, where it might get fertilized. If it is not fertilized, the egg and the inner lining of the uterus are discharged to the outside of the body during the menstrual period.

The uterus is pear shaped and measures approximately 3 inches in length. It has 3 layers. The inner layer of the uterus is known as the endometrium. Once a month, if a woman does not become pregnant and her ovaries are functioning correctly, the endometrium is shed to the outside of the body during the menstrual period.

As menopause approaches, periods become irregular and eventually stop. Menopause occurs when the ovaries no longer produce hormones or release eggs.

If a pregnancy happens, the fetus stays in the uterus until delivery. The uterus is able to expand a great deal. The middle muscular layer of the uterus is responsible for labor contractions that result in the baby being born.

The lowest part of the uterus is known as the cervix; it opens into the vagina. The vagina opens to the outside of the body between the urethra, which is the urinary bladder opening, and the rectum. The urinary bladder is located

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in front of the vagina and uterus. The kidneys drain the urine into the bladder through 2 tubes called ureters. The intestines and rectum are located above and behind the vagina and uterus.



### Cancer And Its Causes

The body is made up of very small cells. Normal cells in the body grow and die in a controlled way.

Sometimes cells keep dividing and growing without normal controls, causing an abnormal growth called a tumor.

If the tumor does not invade nearby tissues and body parts, it is called a benign tumor, or non-cancerous growth. Benign tumors are almost never life threatening. If the tumor does invade and destroy nearby cells, it is called a malignant tumor, or cancer.

Cancer can sometimes be life threatening. Cancerous cells may also spread to different parts of the body through blood vessels and lymph channels.

Lymph is a clear fluid produced by the body that drains waste from cells. It travels through special vessels and bean-shaped structures called lymph nodes.

Cancer treatments are used to kill or control abnormally growing cancerous cells.

Cancers in the body are given names, depending on where the cancer started. Cancer that begins in the ovaries will always be called an ovarian cancer, even if it spreads to other areas of the body.

Although doctors can locate where a cancer started, the cause of cancer in an individual patient cannot usually be identified. Cells contain hereditary, or genetic, materials called chromosomes. This genetic material controls the growth of the cell.

Cancer always develops because of changes that take place in the chromosomes. When the genetic material in a cell becomes abnormal, it can lose its ability to control its growth. These sudden changes in genetic material can occur for a variety of reasons. They may be inherited or they might happen due to exposure to infections, drugs, tobacco, chemicals, or other factors.

### Signs And Symptoms

Unfortunately, signs and symptoms of ovarian cancer appear when the cancer is quite advanced.

It tends to spread to the inside of the abdomen, in the area known as the peritoneum. This can cause severe abdominal pain, mainly in the pelvic area. The pain may also affect the legs and feet if the nerves passing through the pelvis to the legs get affected.

As a reaction to the tumor, an abnormal amount of fluid may accumulate in the abdomen. This is called ascites. Ascites may cause a significant increase in the size of the abdomen and waistline.

Nausea, vomiting, feeling fatigued and losing weight are other symptoms of ovarian cancer.

Abnormal vaginal bleeding can also be a sign of ovarian cancer. The best way to find

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ovarian cancer early is to make regular appointments with a gynecologist.

### Causes Of Ovarian Cancer

The cause of ovarian cancer is still unknown. It usually shows up in women over the age of 35, with most affected women being above the age of 50. Ovarian cancer is more common in Caucasian women.

Women with any family members who have had ovarian, breast or colon cancer are at a higher risk of developing ovarian cancer.

Women who have had breast or colon cancer are more likely to have ovarian cancer.

The following factors have been found to slightly increase the risks of ovarian cancer

- First period at a young age
- Later than average menopause
- Use of fertility drugs
- No children

The following have also been found to increase the risk of ovarian cancer

- Use of hormone replacement therapy after menopause
- Use of talc in the genital area for many years
- Exposure to asbestos

Similarly the following factors have been found to decrease the risks of ovarian cancer

- Use of birth control pills
- Having Children

- Breast-feeding

For unknown reasons it seems that tubal ligation, a form of contraception, decreases the risks of ovarian cancer. It is also important to note that women who have had their uterus and ovaries taken out have less of a chance of developing ovarian cancer.

However, even though the ovaries are taken out, there is still a very small chance of developing ovarian cancer.



### Diagnosis

The diagnosis of ovarian cancer is usually made after a careful history and physical examination are done. In making a diagnosis, radiological tests, CAT scans, and ultrasound of the abdomen are performed.

Researchers are looking at specific blood tests to help catch ovarian cancer at early stages. They look for specific chemical substances that may be linked to ovarian cancer. The best candidate at the present time is known as CA-125, however the usefulness of this test has not been proven yet.

Other radiological tests may be done to try to determine if the cancer has spread to the lungs. Radiological tests may also show whether the tumor has caused an obstruction of the intestines or urinary system. For the final diagnosis, a pathologist must look at some tissue. If there is any abdominal fluid, it can be withdrawn using a needle and syringe.

A pathologist can study the tissue from this sample of fluid.

Another way of taking a tissue sample is by opening the abdomen surgically. This surgery may be laparoscopic, using special scopes. It could also be an open operation, which is called laparotomy.

If the cancer is only in the ovary and has not spread to the intestines, bladder or other abdominal structures, it may be totally removed. This *could* result in a cure.

## **Treatment**

The treatment of ovarian cancer depends on the stage of the cancer and the general health of the patient. Surgery is usually necessary to remove the cancer.

During surgery, all the female reproductive organs, except for the vagina, may be taken out to try to ensure that no cancer is left behind. This operation is known as total abdominal hysterectomy with bilateral salpingo-oophorectomy.

During surgery, the surgeon may take out the lymph nodes in the abdomen and the thin tissue covering the large intestine and stomach. During surgery, the doctor also determines how much the cancer has spread. This is known as staging. If the cancer has spread, the surgeon removes as much of the cancer as possible.

Chemotherapy is also used to treat ovarian cancer. Chemotherapy is the use of powerful drugs to kill cancer cells. Chemotherapy is usually given after surgery to kill any remaining cancer cells.

If no surgery is performed, chemotherapy could be used to control tumor growth or to relieve pain and other symptoms of ovarian cancer.

Radiation therapy is another treatment option for ovarian cancer. It involves the use of high-energy rays to kill cancer cells. Radiation therapy affects the cancer cells in the treated tissues. In younger patients, who may still wish to become pregnant, only the affected ovary and fallopian tube is taken out. A small piece of the other ovary may also be taken out to make sure that all the cancer is removed.

## **Summary**

Ovarian cancer is not common. There is a lot higher chance of cure and successful treatment if it is discovered early. Yearly medical examinations help to find cancer in its early stages.

Women with a strong family history of ovarian cancer need to be examined more frequently by their doctors.

Thanks to advances in medicine, several treatment options are available to treat ovarian cancer.